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PRINTMAKING

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POLARPAM

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Cover: Harry Savage "Prairie Dump 1964", etching 9/10, 8½" x 7½",
donated by Dr. K. A. C. Clarke, Permanent Collection, Edmonton Art Gallery.

Introduction

Many of the printmaking techniques used by artists originated as quick or inexpensive methods of duplicating images, often commercially. As these techniques were recognized for their inherent peculiarities they were used to make prints. A print is an original work of art of which there is more than one copy, but because a print is the work of an artist it is not the same as a reproduction. A reproduction is a duplicated photograph of a work of art and it should not be considered a print.

Although a print may resemble a drawing or a painting, it has an ambiance that results only from a specific technical union of ink and paper by some means of pressure. Whereas some printmaking techniques are spontaneous and direct, much like drawing, others provide effects that can be achieved in no other way. Often printmaking techniques will mimic each other so that a print can be identified as the result of a certain process only after it has been looked at closely.

Throughout the history of printmaking, images that have found a place in prints have been conceived in much the same manner as drawings and paintings. These could simply be considered as alternative ways of making drawings, while in contrast, contemporary prints are able to be only the outcome of a particular technique conceived within the limitations of that technique and reflecting its possibilities. Such prints are unrelated in appearance or conception to traditional drawing and painting.

Because prints are multiple copies, the same image can have a wide distribution. On occasion, either intentionally or inadvertently, prints have affected the history of art. In the 15th and 16th centuries, artists such as Raphael and Rubens supervised the copying of their paintings by trained printmakers. These prints became the disseminators of visual information to other art centres and in turn, influenced other artists. In a later time, Japanese color woodblock prints, while suffering a stylistic decline in Japan, influenced both the subject matter as well as the composition of late 19th century French art.

Often in the past, involved and unpredictable printmaking techniques were trusted to the skilled hands of artisans. In fact, the creation of Japanese color woodblock prints, among the most refined in the history of art, was a three-stage task requiring a carver and a printer in addition to the artist, all of whom were often members of the same family. Similarly, in the 19th and early 20th centuries, French workshops printing lithographs, employed "chromistes" or technicians trained in color printing who would translate the artist's color sketches into a print. However, out of aesthetic necessity, artists themselves have been the innovators of significant printmaking methods.

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Some prints may be printed in stages, allowing the artist to see how a design is changing. These unfinished prints are called "states." They are often valued as clues to understanding the working and thinking processes of an artist. In the final printing, all the prints of uniformly good quality of the same image form an "edition". Printmaking implies production of not just a single copy or "impression" of an image but consistently good impressions. Legitimate variations are allowed from print to print. The extent of variation may reflect the amount of technical know-how in printing, unless the artist intentionally allows for variation to enhance his concept. Upon completion an edition is signed and numbered by the artist. Trial impressions of good quality printed prior to the edition are called "artist's proofs".

Three traditional processes of printmaking are alive and viable at present, despite extensive experimentation. Either one or more of the techniques of **Relief, Intaglio** or **Planography,** are used to make a print.

I

Relief

Woodcutting, Wood Engraving

Relief, the earliest form of printmaking, is associated mostly with **woodcut** even though many materials have been tried during the many stages of its development. A woodcut usually incorporates a stark contrast of dark ink against light paper. For a long time, woodcuts were merely imitations of pen drawings, somewhat stiff and labored but full of luminosity. Eventually artists, Gauguin for one, took advantage of the grain of the wood appearing in their prints and integrated it into their compositions. Woodcuts were also the earliest prints to include color.

To make a woodcut, areas of the design not required in the finished print are gouged out with metal cutting tools in a woodblock that has been cut with the grain. On completion of the design, the woodblock is inked with a roller taking care not to smudge ink into the parts cut out. Absorbant paper is placed on top and its reverse is rubbed with a blunt tool, for example a wooden spoon. This action transfers the ink to the paper, and it is a hand printing process. Since the 15th century, a press was used to print woodcuts if they were to be part of a printed page.

A **wood engraving** is a woodcut which has finer lines. A woodblock that has been cut against the grain is needed to make detail possible. This woodblock has upright and firmly packed fibers and these are unlikely to split. The cutting is done with a sharp, narrow, pointed metal tool called a "burin". The use of this cross-sectioned block was discovered in the 18th century. One hundred years later and with the appearance of professional wood engravers, wood engraving had grown to be the standard for illustrating books and magazines.

The inking of a relief block.

II

Intaglio
Engraving, Drypoint, Mezzotint, Etching, Collagraphy

The formation of an **Intaglio** print, a 15th century invention, is physically the reverse of that of a relief print. Ink is forced into depressions in a metal plate rather than rolled onto the plateau-like sections of a woodcut. Intaglio techniques adapted well to the expedient translation of drawings and paintings to prints for which they were popularized. By comparison, the ancestral woodcuts were eventually judged to be too time consuming.

Either direct mechanical means or the help of chemicals is used to work a design into a flat plate of copper or steel. To make an **engraving,** thin v-shaped lines resembling drawn lines are cut into the metal with the sharp, pointed burin.

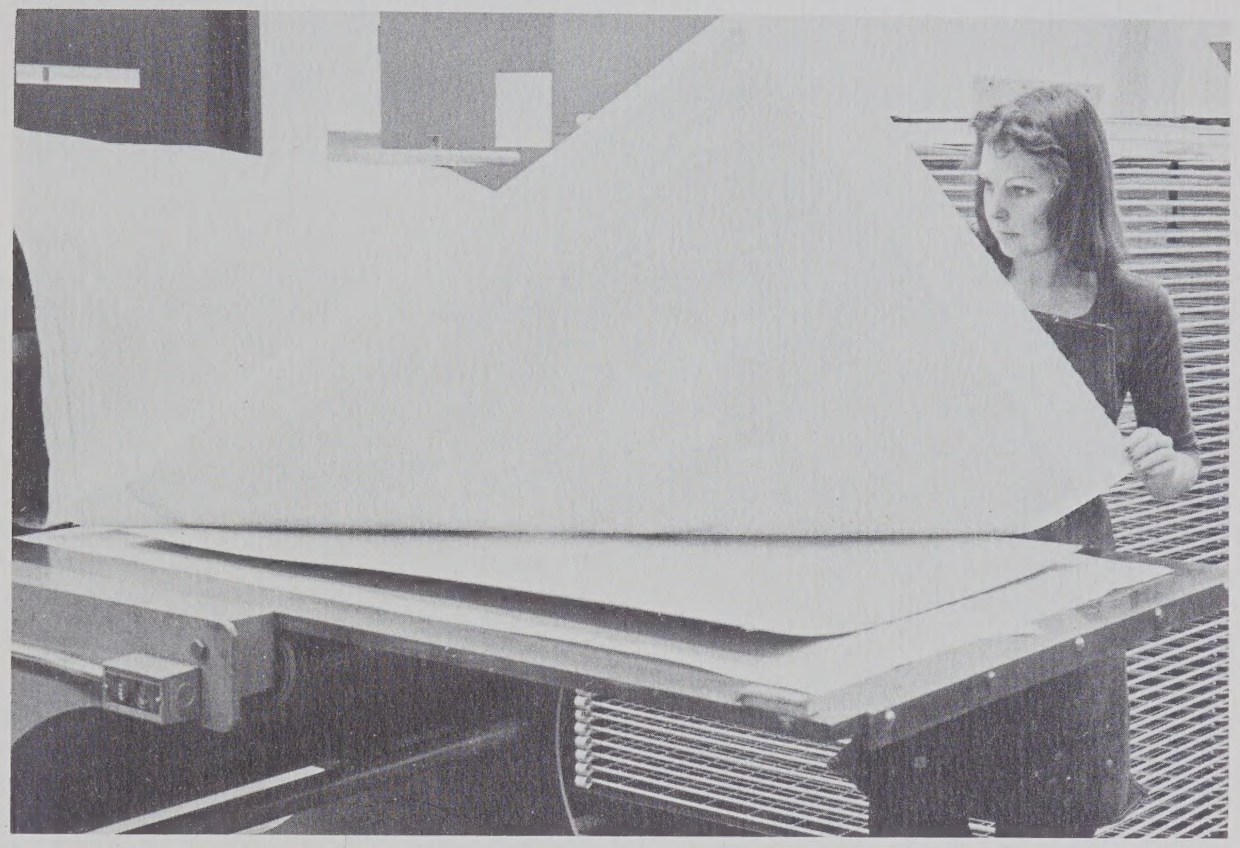
A sensitive hand operation of "inking" a plate is the same in all intaglio printing. The plate's surface is spread with dense ink so that the ink is forced into the incisions. Next, excess ink is wiped from the surface first with cloth, then by hand. A thin veil of ink may be left which will soften the incised lines and suggest atmosphere in the finished impression.

To print, a piece of damp paper is centered on top of the plate. The plate and paper are run through a press whose clothes-wringer type pressure forces the paper into the grooves and allows it to pick up the ink. These printed lines are slightly raised.

Drypoint is a technique similar to engraving but easier. In place of cutting grooves, the surface of a metal plate is scratched with a needle. This action lifts up burrs which will catch and hold ink. The burrs, however, will quickly wear down limiting the number of impressions that can be made from a drypoint.

Mezzotint invented in the 17th century, is used to form dark tonal areas. A plate is abrased with a curved, steel-toothed tool called a "rocker". The teeth are designed to scratch parallel lines into the metal. It is dragged across the plate in several directions causing a rough surface that will hold ink and will print as a tone. Areas of this rough surface are then smoothed out or "burnished". These smooth parts may be engraved or left to print as light tones only.

In contrast to cutting and scratching a surface by hand, acid is used to bite out the lines of an **etching.** A metal plate is covered with a waxy protective coating called a "ground". Ink lines can be approximated with a "hard ground", textures and pencil and crayon-like lines with a "soft ground". It is essential to s c r a t c h or press through the ground to expose the metal plate. The plate is then dipped into an acid bath which will dissolve out or "etch" the unprotected areas. The procedures for inking and printing are as above.



An intaglio impression is pulled off a plate.

Aquatint is the chemical counterpart of mezzotint and it is generally used to enhance the lines of an etching. The plate is treated so that it remains porous, allowing acid to bite a rough texture. When inked and printed shadows or tones will result.

The quality of the lines of an etching is markedly different from the strong and elegant lines familiar to an engraving. As acid deteriorates the metal, softer, more brittle lines emerge. Although intaglio prints appear spontaneous certainly in comparison to relief, the execution of an engraving requires patient control because the metal is actually cut. An etching, more than an engraving, may closely resemble a drawing.

The inventive and unorthodox printmaking technique known as **collagraphy** involves principles of intaglio and relief in a description of the plate. Inking and printing are the same as for other intaglio techniques. The possibilities of collagraphic printing were discovered in the 1950's and it is a unique method in its reliance, at time spontaneous, on the assembly of found objects to achieve a range of textures. Because a collagraphic plate may be an additive process, many colors from separately inked parts can be printed at one time, in variance to other techniques that require an individual block for each color. Colors from a collagraphic plate also tend to print with a great amount of clarity and crispness.

III
Planography
Stencils, Serigraphy or Silkscreen, Lithography

Planography differs from the preceding two techniques in that all the activity occurs physically on a plane. Ink neither lies in furrows nor in relief. This type of printmaking, in particular serigraphy, is popular because several colors can be printed with speed. Silkscreen and often lithography lend themselves to graphic and photographic images and bold flat colors with hard clean edges. Unlike other techniques, silkscreen rarely duplicates pen or pencil drawing.

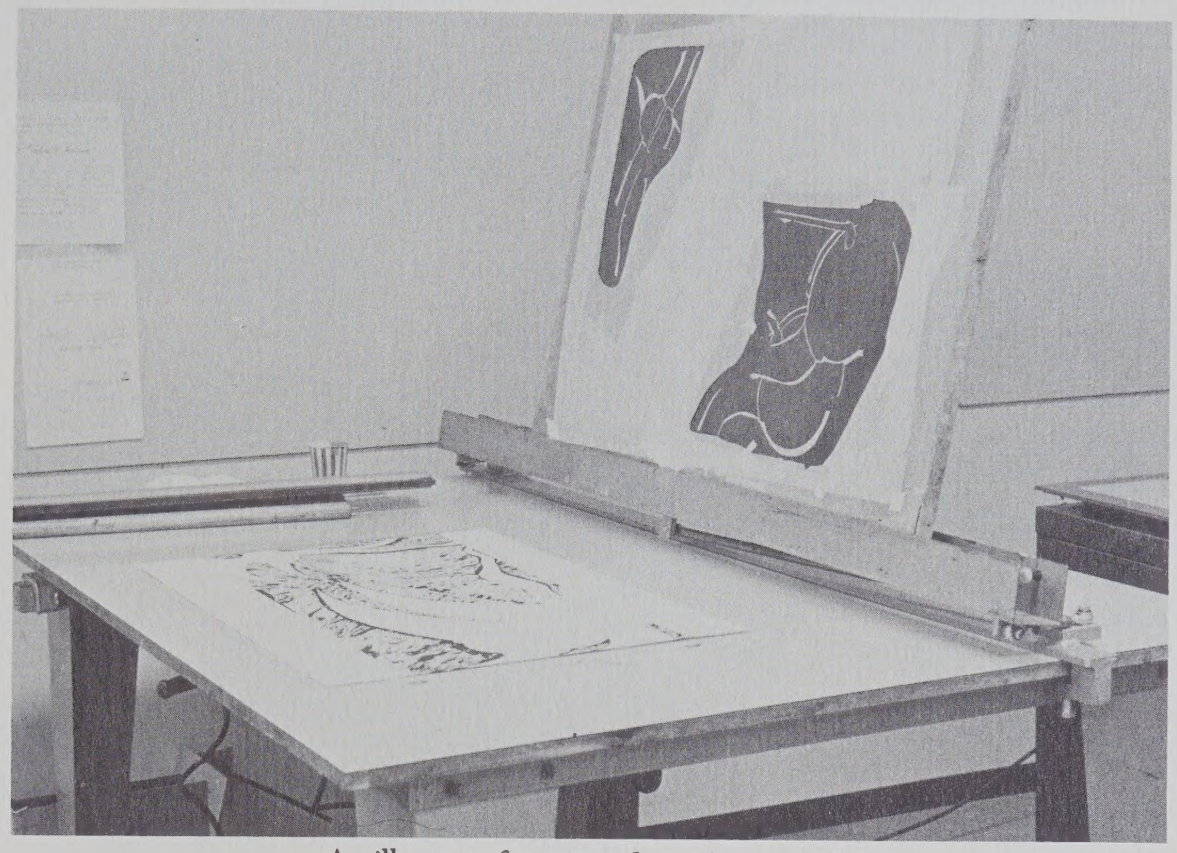
The three planographic processes are divergent but understanding a stencil technique is basic to them. A **stencil** is one of the simplest ways to reproduce uncomplicated images. Many Eskimo prints from Baker Lake are stencils. To make a stencil a desired shape is cut into a non-porous material which stops the flow of ink. Sprayed or brushed ink then passes only through the open design onto the paper.

Serigraphy or **silkscreen** is a sophisticated stencil technique by which prints of many colors can be printed in the hundreds. It was invented in the 1930's in the U.S. to print posters cheaply. A piece of silk or other tightly woven mesh is stretched tautly over a frame. An image is blocked out on the mesh in various ways leaving some fibers open and others closed. The screen is then laid flat on top of a piece of paper, and a long rubber blade called a "squeegee" is used to squeeze ink through the open fibers as it drags ink across the screen. The printing can be accomplished by hand or machine. Each new color requires an individual screen.

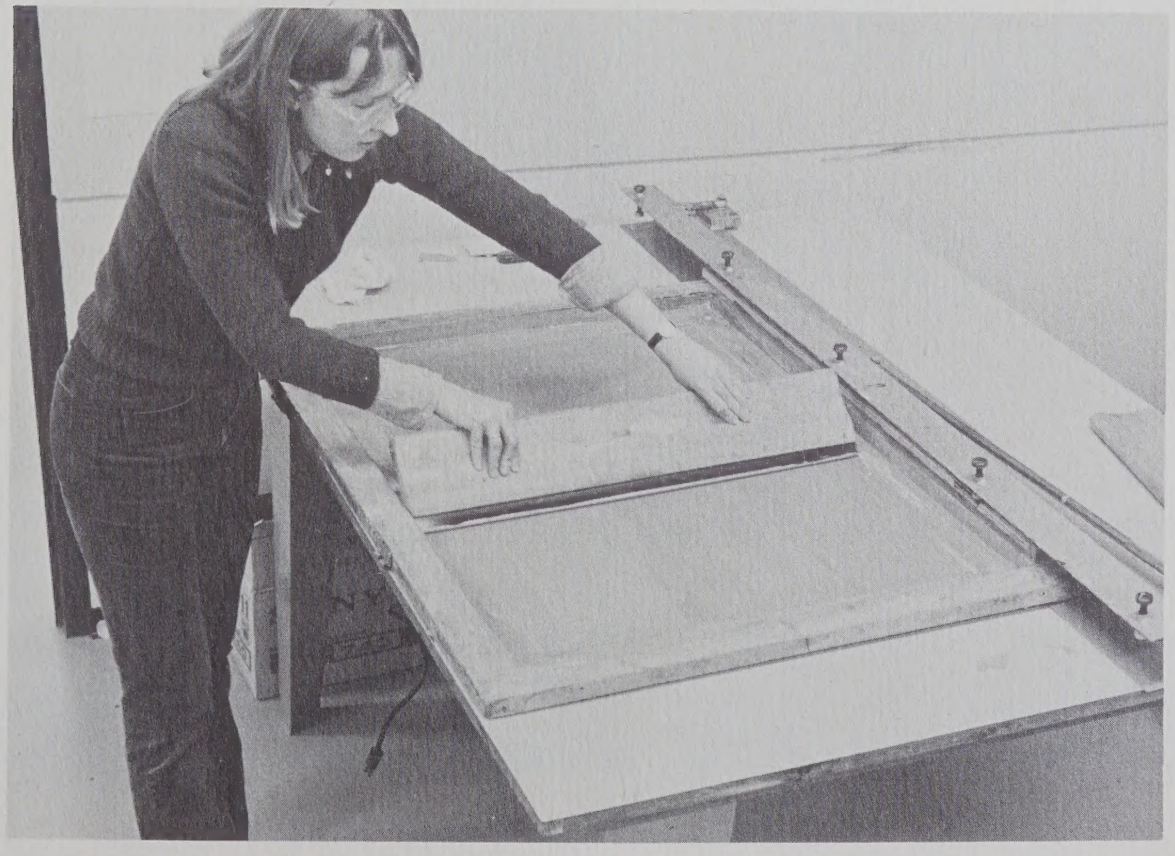
Lithography is a delicate printmaking technique of infinite variety and also subject to unpredictability. Lithographs can look like pen or pencil drawings, photographs, silkscreen prints or even paintings and yet remain distinct from any of these. A lithograph is made traditionally on a slab of limestone or more recently on metal plates that have been treated to perform like stones. Both the drawing or design of an image and the printing technique rely on the fact that grease and water separate. The drawing is done on a cleaned-off stone with a greasy crayon or ink. Even a fingerprint will do. Next, the entire surface of the stone is treated chemically sensitizing the image and non-image areas so that only the areas where there is drawing will absorb ink and be printed. During the inking procedure the stone is kept wet so that the non-image areas repel the greasy ink. The stone along with damp paper is run through a special press making the ink from the flat surface of the stone intact on the face of the paper.

Lithography was discovered in Germany just prior to 1800 and initially it was used as a cheap way of printing music scores. Throughout the 19th century it was the popular method of making fine prints. French artists influenced by the unabashed colorfulness of Japanese woodcuts demanded the presence of color in their lithographs. Lithography became the first technique to print posters in color that were publicly displayed foretelling of the billboards to come. As of the '60's, large educational printmaking workshops have opened and lithography is now enjoying a renascence.

Lelde Muehlenbachs, Extension Officer



A silkscreen frame ready to be printed.



A squeegee is used to drag ink across the silkscreen.

A lithograph is pulled from a stone after printing.

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